

# How to Send Email from an AS/400

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This procedure is intended for emailing PDF files created by FORMagic/400 PDF. However, it can also be used for sending email from other applications. It is based solely on the use of AS/400 commands and facilities; no additional software is required. It supports emails with optional attached files, such as purchase orders and invoices. It is based on the AS/400 command SNDDST which has somewhat limited functionality. Yet, it is still sufficient for most needs.

This procedure, and the necessary AS/400 setup instructions below, do not provide support for **receiving** email on an AS/400 as doing so is beyond the scope of our product and its support.

## Disclaimer:

The necessary configuration can be done in numerous ways. We can only support methods similar to the one documented below. These instructions are intended to represent a general approach only; the user is responsible for evaluating the specific needs of his environment.

Note that changing existing parameter values to conform to the values we have noted below could impact other functions on your system.

The user is responsible for all security configuration on his AS/400, but we believe these instructions are sufficient for the majority of users wishing to configure **send** email only.

## Requirements:

- OS/400 V4R2 or higher.
- An SMTP email sending server must exist somewhere on your network. This can include an ISP service.

## 1. Setup instructions - TCP/IP access to email send server:

- a. You must know the TCP/IP address of your email sending server. This is often referred to as an email gateway. It could be on your own AS/400, on a network server, or part of an ISP service. In each case, it must be properly configured as an SMTP send server. If you have a POP3 client capable of sending email, then you would most likely use its configured outgoing email TCP/IP address for this purpose. This address will be referred to as YOUR-SMTP-ESA (SMTP email server address) below.
- b. Check the TCP/IP Hosts Table to see if an entry exists for YOUR-SMTP-ESA. Use command CFGTCP, option 10. If not, add an entry similar to this:

```
INTNETADR(your-smtp-esa) HOSTNAME('SMTP')
```

You can also use ADDTCPHTE to add this entry.

If YOUR-SMTP-ESA is already in this table, make a note of its HOSTNAME entry and use it wherever 'SMTP' is referred to below.

- c. If a router sits between your AS/400 and your email send server, an entry like this will be required. Use command CFGTCP, option 2 to check it. If not, add an entry similar to this:

```
RTEDEST(*DFTRROUTE) *SUBNETMASK(*NONE) NEXTHOP(router-address)
```

You can also use ADDTCP RTE to add this entry or CHGTCP RTE to change it.

**Caution:** This step may require changes based on your actual network.

- d. Ping the email sender with **each** of these commands. Both **must** work!

```
PING SMTP
PING *INTNETADR INTNETADR('your-smtp-esa')
```

- e. The TCP/IP Host Table must contain an entry for **your own system**. Use command CFGTCP, option 10 to see if the entry below exists. If not, add an entry similar to this one.

```
INTNETADR(your-system-tcpip-addr) +
HOSTNAME((your-system-name) (your-system-name.your-domain.xxx))
```

Use DSPNETA to verify or obtain Your-System-Name. Use CHGTCPDMN to obtain Your-Domain.xxx (don't change it!).

This setup provides one entry with two values for your system:

- the first value is simply your system name or the "short name"
- the second is the "long name" or sysname.domainname (ie, sysname.mydomain.com)

You can also use ADDTCPHTE or CHGTCPHTE to add or change this entry.

## 2. Setup instructions - SMTP settings:

- a. The SMTP server must be started in order to send email. Change or verify these SMTP attributes or make other settings appropriate for **your** environment. Use CFGTCPSMTP option 3, or:

```
CHGSMTPA AUTOSTART(*YES) MAILROUTER('SMTP') FIREWALL(*YES)
```

When making the above entry, also verify these parameters:

```
AUTOADD(*NO)
USRIDPFX(QSM)
ADDRESS(QSMRMTAD)
SYSNAME(TCPIP)
TBLTYPE(*SYSTEM)
```

We are uncertain as to whether other values will co-exist with the setups we are describing. However, be cautious if making **any** changes since they could impact existing applications on your system.

- b. These instructions assume you are **sending** email only and any **reply** must be sent to an address on another system. In order to insure the FROM address used in your emails is valid, an alias entry must be set up for **every** User ID that will **send** email. Note that if you will be sending email only from applications all running under the same User ID, only one entry will be needed. You may also be able to use the USERID parameter of the SNDDST command to limit the number of entries that are required.

Configuration is a two step process. First, each user to be sending email must be listed in the System Directory. Use WRKDIRE \*ALL to view and add entries. Certain parameter values are required or highly recommended; any value can probably be used for others.

```
ADDIRE USRID(userid address-is-systemname) USRD('Person's name, etc') +
USER(local-userid) SYSNAME(*LCL) NETUSRID(*USRID) +
MSFSRVLVL(*USRIDX) PREFADR(*USRID)
```

Note that some of these parameters will actually be stored as expanded values. PREFADR will be displayed as blanks.

Note: If your user profile belongs to a group, you may have to add the Group Profile as a user as well.

Next, use CFGTCPSMTP option 1 to add an entry for each of the email users to the SMTP System Alias Table. Four values are required for each entry:

User ID and Address - must match the WRKDIRE User ID and address

SMTP ID and domain - this is your address where you **receive** email. It is your FROM address and actually has nothing to do with the **send** process except to establish the FROM address. For instance, john@ibm.com would use:

SMTP ID: john  
SMTP Domain: ibm.com

- c. One generic entry is required in the System Directory to route email from the AS/400 to all Internet users. Use WRKDIRE \*ALL to see if this entry exists; otherwise add it:

```
ADDIRE USRID(INTERNET SMTPRTE) USRD('Internet generic email user') +  
SYSNAME(TCPIP) NETUSRID(*USRID) MSFSRVLVL(*USRIDX) +  
PREFADR(NETUSRID *IBM ATCONXT)
```

Note: The entry of the PREFADR parameter information is **different** for the ADDIRE command versus WRKDIRE option 1! When using WRKDIRE, make entries as follows:

Preferred address: 9  
Address Type: ATCONXT  
Field Name: NETUSRID \*IBM

Also, verify this entry exists (it probably does) or add it:

```
ADDIRE USRID(QSMTPDMY QSMTPSYS) USRD('QSMTP user') +  
SYSNAME(TCPIP) NETUSRID(*USRID) MSFSRVLVL(*USRIDX)
```

These instructions **assume** the system name TCPIP is used. It must match the value used in setup steps below, and some system objects are often pre-configured with this value. The parameter values for NETUSRID, MSFSRVLVL, and PREFADR are vital.

- d. Verify a distribution queue exists or add it. Use CFGTCPSMTP option 12 for SNADS configuration, then select option 1 for Distribution Queues. An entry should exist or be created with the values below. You can also use ADDDSTQ. Other parameters should generally be defaulted.

```
DSTQ(QSMTPQ) RMTLOCNAME(TCPIP) DSTQTYPE(*RPDS)
```

- e. Verify a routing table entry exists or add it. Use CFGTCPSMTP option 12 for SNADS configuration, then select option 2 for Routing Table.

System Name/Group: TCPIP  
Description: TCP/IP Routing  
Service level: Use these values for all service levels  
Queue name: QSMTPQ  
Maximum hops: \*DFT

- f. Mail services must know how to route mail to the Internet. Use the command below to verify existing values. The SMTPRTE value is critical, but we have not assessed the effect of changing the other parameters.

```
CHGDSTA KEEPSCP(*BCC) USEMSFLCL(*NO) SMTPRTE(INTERNET SMTPRTE)
```

- g. Authority issues can arise and cause the Mail Server Framework (MSF) facility to terminate. To eliminate that possibility, view these object authorities with EDTOBJAUT. For each object, verify the authority is at least \*USE for users QTCP and QMSF. Add or enhance the authority as needed. \*CHANGE is okay in lieu of \*USE. (continued on next page)

OBJ(QSYS/QZMFARV) OBJTYPE(\*PGM)  
OBJ(QSYS/QZMFASCR) OBJTYPE(\*PGM)  
OBJ(QSYS/QZMFACHG) OBJTYPE(\*PGM)  
OBJ(QSYS/QZMFACRT) OBJTYPE(\*PGM)

- h. The MSF must search the System Directory to find information for routing email to the Internet. Searching must be properly enabled or the MSF will terminate with error code 05.

First, verify searching is enabled. Use CHGSYSDIRA to verify Allow Search is set to \*YES. If \*YES, assume everything is okay and go to the next major step (i) below.

If Allow Search is set to \*NO or if MSF terminates with error code 05 even though \*YES is configured, continue with these steps:

1. If MSF is terminating with error code 05 even though it is set to \*YES, change it to \*NO, then continue with these steps to set it back to \*YES.
2. Locks may be present on one or more of these \*FILE objects in the QUSRSYS library. These locks must be released before the Allow Search parameter can be set to \*YES.

QAOKL03A, QAOKLXDA, QAOKL9XA, QAOKLSRA

Use WRKOBJLCK to determine which objects, if any, are locked. If no locks are held on these objects, skip to step 5.

3. Some locks may be held **and retained** by various CFGxxx commands used during the configuration steps described herein. To clear these, sign off and sign on. Do **not** use any of the CFGxxx commands until this section is completed as doing so may re-establish the locks.
  4. Some locks may be held by SNADS or other subsystems. These subsystems must now be ended. On our systems, this is subsystem QSERVER.
  5. Use CHGSYSDIRA to set Allow Search to \*YES.
  6. Restart any subsystems ended in step 4.
- i. Sending email requires that TCP/IP, SNADS, SMTP, and MSF jobs be active. Configuring these processes is beyond the scope of our support if it is much beyond what is described in this document. Configuration can be done **numerous** ways and many issues can arise. If your environment uses default settings, the configurations we have described **should** work.

However, the necessary jobs **must** be active. We will assume TCP/IP and SNADS are, so that leaves SMTP and MSF to be dealt with.

Step 2a above sets up SMTP to Autostart. If it is not running, you can also start it with: STRTCPSVR \*SMTP

MSF is started automatically by other processes, but if it terminates, it can be started with: STRMSF

Note: You may find that you must end and restart some of these processes in order to allow them to use the new configurations. You can do this as follows:

ENDMSF	
ENDSBS QSNADS	*1
ENDTCPSVR *SMTP	*2
STRTCPSVR *SMTP	*2
STRSBS QSNADS	*1
STRMSF	*3

- \*1 - SNADS functions must be running, but how to start/stop them will vary widely depending on how your system is configured.
- \*2 - You may have to use \*ALL in lieu of \*SMTP, but this could impact other applications.
- \*3 - If MSF aborts, you may have to ENDMSF and STRMSF with \*CLEAR to clear previous distributions which have been queued but not sent.

You can also use these commands to end and re-start these processes whenever needed.

### 3. Setup instructions - Time for the Acid Test:

- a. The SNDDST command is used to send the email. The TYPE parameter provides multiple basic methods for sending, but some do **not** support sending email to the Internet. When the subtleties of this command are studied carefully, it can do much more than is first apparent. Even with its limitations, it is normally adequate.

For now, let's just do a quick test to see if the configuration we have established can actually send an email. If not, check the entire configuration you have established **very** carefully.

```
SNDDST TYPE(*LMSG) TOUSRID((INTERNET SMTPRTE)) DSTD('Any descrip') +
  TOINTNET((me@mysystem.com)) SUBJECT('This is the subject') +
  MSG('This is the short message parameter') LONGMSG('This is the long message parameter')
```

Note that LONGMSG is required, but MSG is optional. If both are used, the message text is constructed as MSG, several blank lines, then LONGMSG.

Now, check email at the TOINTNET address and see if you have received the message. DSPDSTLOG may be of use if a problem occurs.

- b. Test an email with an attached document. The document **must** be in a QDLS folder. Note that LONGMSG and SUBJECT are not allowed, and only one document can be attached. The document name will be used as the subject. There does not appear to be any way to freely control the text used as the Subject.

```
SNDDST TYPE(*DOC) TOUSRID((INTERNET SMTPRTE)) DSTD('Any descrip') +
  TOINTNET((me@mysystem.com)) MSG('This is a test') DOC(document) FLR(folder)
```

- c. You can also send an email with an attached document where the source is a database file. However, this command does not work as generally expected; so we will leave it to you to do the necessary experimentation to see if it can be effective for your needs. Use SNDDST TYPE(\*FILE).
- d. Multiple Internet recipients, CCs, and BCCs can be used in SNDDST. However, some versions of OS/400 have a bug involving the use of Internet Recipient Type \*CC. This bug causes the attachment to be inserted as corrupted message text. Be careful when using \*CC.
- e. If the above summaries of using SNDDST do not meet your needs, additional detailed information provided in Redbook SG24-4703 may be useful. Check the IBM Redbook site, or send us an email requesting SG244703.PDF.

### 4. Setup instructions - Other Situations:

- a. For V4R2 and prior, attachments may be split into multiple attachments and/or corrupted. If you create a data area QUSRSYS/QTMSNOSPLT, it will turn off message splitting. V4R4 and later uses the CHGPOPA command with MSGSPLIT(\*NOMAX) parameter to turn off message splitting. Once you have made this change, stop and restart your SMTP server.
- b. Unsent mail may be stored in folder /qtcptmm/attabox. Use WRKLNK to view. This may be helpful for debugging when mail is not being sent.